

CLAIMS:

1. A method for operating at least a valve in at least  
a cylinder of an internal combustion engine, the method  
5 comprising:

operating said valve at least during a first  
operating condition of a transmission coupled to said  
internal combustion engine; and

deactivating said valve at least during a  
10 second operating condition of said transmission coupled  
to said internal combustion engine.

2. The method of Claim 1 wherein said first operating  
condition of said transmission is an elevated  
15 transmission oil temperature.

3. The method of Claim 1 wherein said second operating  
condition of said transmission is a low transmission oil  
temperature.

20 4. The method of Claim 1 wherein said first operating  
condition of said transmission is a low gear of said  
transmission.

25 5. The method of Claim 1 wherein said second operating  
condition of said transmission is a high gear of said  
transmission.

6. The method of Claim 1 wherein said valve is an  
30 electromechanical valve.

7. A method for controlling at least an electromechanically actuated valve to operate in at least a cylinder of an internal combustion engine, the method comprising:

5                   determining an operating condition of a transmission coupled to said internal combustion engine;                   evaluating whether to operate said electromechanically actuated valve in said cylinder based on said operating condition; and

10                   operating said selected electromechanically actuated valve during a cycle of said cylinder based on said evaluation.

8. The method of Claim 6 wherein said operating  
15 condition is the current and next gear selection of said transmission.

9. The method of Claim 6 wherein said operating  
condition is the oil temperature of said transmission.

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10. The method of Claim 6 wherein said operating condition is a selected transmission gear.

11. The method of Claim 1 wherein said operating  
25 condition is the state of a torque converter lock-up clutch.

12. The method of Claim 6 wherein said operating  
condition is a torque loss of said transmission.

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13. The method of Claim 6 wherein said operating condition is a position of a gear selector switch.

14. A method for controlling electromechanically actuated valves to operate in an internal combustion engine, the method comprising:

5       determining an operating condition of a transmission coupled to said internal combustion engine;  
      selecting a number of electromechanical valves based on said determined transmission operating condition; and  
      operating said internal combustion engine with  
10   said selected electromechanical valves during a cycle of said cylinder based on said evaluation.

15   15. The method of Claim 13 wherein said operating condition is the current and next gear selection of said transmission.

16. The method of Claim 13 wherein said operating condition is the oil temperature of said transmission.

20   17. The method of Claim 13 wherein said operating condition is a selected transmission gear.

18. The method of Claim 13 wherein said operating condition is the state of a torque converter lock-up  
25   clutch.

19. The method of Claim 13 wherein said operating condition is a torque loss across said transmission.

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20. A method for controlling at least an electromechanically actuated valve to operate in at least a cylinder of an internal combustion engine, the method comprising:

5                   determining an operating condition of a transmission coupled to said internal combustion engine;  
                  selecting number of cylinders to operated based on said determined transmission operating condition; and  
                  operating said internal combustion engine with  
10 said selected number of cylinders during a cycle of said cylinder based on said determination.

21. The method of Claim 19 wherein said operating condition is the current and next gear selection of said  
15 transmission.

22. The method of Claim 19 wherein said operating condition is the oil temperature of said transmission.

20 23. The method of Claim 19 wherein said operating condition is a selected transmission gear.

24. The method of Claim 19 wherein said operating condition is the state of a torque converter lock-up  
25 clutch.

25. The method of Claim 19 wherein said operating condition is a torque loss of said transmission.

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26. A method for controlling at least an electromechanically actuated valve to operate in at least a cylinder of an internal combustion engine, the method comprising:

5                   determining an operating condition of a transmission coupled to said internal combustion engine;                   selecting a number of cylinders and electromechanical valves to operate based on said determined transmission operating condition; and  
10                   operating said internal combustion engine with said selected number of cylinders and electromechanical valves during a cycle of said cylinder based on said determination.

15   27. The method of Claim 25 wherein said operating condition is the current and next gear selection of said transmission.

20   28. The method of Claim 25 wherein said operating condition is the oil temperature of said transmission.

29. The method of Claim 25 wherein said operating condition is a selected transmission gear.

25   30. The method of Claim 25 wherein said operating condition is the state of a torque converter.

30   31. The method of Claim 25 wherein said operating condition is a torque loss of said transmission.

32. A computer readable storage medium having stored data representing instructions executable by a computer to control an internal combustion engine of a vehicle, said storage medium comprising:

5           instructions for operating a valve based on a first operating condition of a transmission coupled to said internal combustion engine; and

              deactivating said valve based on a second operating condition of said transmission coupled to said  
10 internal combustion engine.

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